LineUp With Math™ Alignment
Kansas Curricular Standards for Mathematics
Jan 31, 2004

Standard 1: Number and Computation

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with rational numbers and the irrational number pi in a variety of situations.

Ninth and Tenth Grade Knowledge Base Indicators The student…	***LineUp With Math*™ Activities**
2. estimates real number quantities using various computational methods including mental math, paper and pencil, concrete objects, and/or appropriate technology (2.4.K1a)	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
Ninth and Tenth Grade Application Indicators The student…	***LineUp With Math*™ Activities**
1. adjusts original rational number estimate of a real-world problem based on additional information (a frame of reference)(2.4.A1a)	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
2. estimates to check whether or not the result of a real-world problem using rational numbers, the irrational number pi, and/or simple algebraic expressions is reasonable and makes predictions based on the information (2.4.A1a)	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Benchmark 4: Computation – The student models, performs, and explains computation with real numbers and polynomials in a variety of situations.

Ninth and Tenth Grade Knowledge Base Indicators The student…	***LineUp With Math*™ Activities**
1. performs and explains these computational procedures (2.4.K1a): b. multiplication or division to find: ii. percent of increase and decrease	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control.
Ninth and Tenth Grade Application Indicators The student…	***LineUp With Math*™ Activities**
1. generate and/or solves multi-step real-world problems with real numbers and algebraic expressions using computational procedures (addition, subtraction, multiplication, division, roots, and powers excluding logarithms), and mathematical concepts with: d. application of percents (2.4.A1a)	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control. --Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

Standard 2: Algebra

Algebra – The student uses algebraic concepts and procedures in a variety of situations.

Benchmark 4: Models – The student generates and uses mathematical models to represent and justify mathematical relationships in a variety of situations.

Ninth and Tenth Grade Application Indicators The student…	***LineUp With Math™*** **Activities**
1. recognizes that various mathematical models can be used to represent the same problem situation. Mathematical models include: a. process models (concrete objects, pictures, diagrams, number lines, hundred charts, measurement tools, multiplication arrays, division sets, or coordinate grids) to model computational procedures, algebraic relationships, mathematical relationships and problem situations and to solve equations; d. function tables to model numerical and algebraic relationships; e. coordinate planes to model relationships between ordered pairs and equations and inequalities and linear and quadratic functions; i. frequency tables, bar graphs, line graphs, circle graphs, Venn diagrams, charts, tables, single and double stem-and-leaf plots, scatter plots, box-and-whisker plots, histograms and matrices to describe, interpret, and analyze data	--Use an interactive simulator to identify distance, rate, time conflicts in air traffic control problems and resolve the conflicts by varying plane speeds. --Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.
3. uses the mathematical modeling process to analyze and make inferences about real-world situations	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

Standard 3: Geometry

Geometry – The student uses geometric concepts and procedures in a variety of situations.

Benchmark 2: Measurement and Estimation – The student estimates, measures, and uses measurement formulas in a variety of situations.

Ninth and Tenth Grade Knowledge Base Indicators The student…	***LineUp With Math™*** **Activities**
1. determines and uses real number approximations (estimations) for length, width, weight, volume, temperature, time, perimeter, area, surface area, and angle measurement using standard and nonstandard units of measure (2.4.K1a)	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

2. selects and uses measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate rational number representations for length, weight, volume, temperature, time, perimeter, area, surface area, mass, midpoint, and angle measurements. (2.4.K1a)	--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.
7. knows, explains, and uses ratios and proportions to describe rates of change (2.4.K1d)	--Use an interactive simulator plus calculation worksheets to apply proportional reasoning to identify and resolve distance, rate, time conflicts in air traffic control.
Ninth and Tenth Grade Application Indicators The student… 1. solves real-world problems by (2.4.A1a): e. using rates of change	***LineUp With Math™* Activities** --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Identify and resolve distance, rate, time conflicts in air traffic control problems by varying plane speeds or changing plane routes.
2. estimates to check whether or not measurements or calculations for length, weight, volume, temperature, time, perimeter, area, and surface area in real-world problems are reasonable and adjusts original measurement or estimation based on additional information (a frame of reference) (2.4.A1a)	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
Benchmark 4: Geometry From An Algebraic Perspective – The student uses an algebraic perspective to analyze the geometry of two- and three-dimensional figures in a variety of situations.	
Ninth and Tenth Grade Application Indicators The student… 1. represents, generates, and/or solves real-world problems that involve distance and two-dimensional geometric figures including parabolas in the form $ax^2 + c$ (2.4.A1e)	***LineUp With MathTM Activities*** --Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
2. translates between the written, numeric, algebraic, and geometric representations of a real-world problem (2.4.A1a-e).	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.